CONSERVATION PRACTICE STANDARD

CLOSURE OF WASTE IMPOUNDMENTS

(No.)

CODE 360

DEFINITION

The closure of waste impoundments (treatment lagoons and liquid storage facilities), that are no longer used for their intended purpose, in an environmentally safe manner.

PURPOSE

This practice may be applied as part of a conservation management system to support one or more of the following purposes.

- Protect the quality of surface water and groundwater resources.
- Eliminate a safety hazard for humans and livestock
- Safeguard the public health.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to agricultural waste impoundments that are no longer needed as a part of a waste management system and are to be permanently closed or converted.

Where these impoundments are to be converted to fresh water storage and the original impoundment was not constructed to acceptable standards, this practice will only apply where the investigation shows structural integrity.

CRITERIA

General Criteria

The closure shall comply with all Federal, State, and local laws, rules, and regulations.

The scope of the closure or conversion procedure shall be based on a contamination and safety risk assessment including an evaluation of any existing seepage control liner, structure integrity, the proximity of groundwater to the waste structure, safety hazards and the intended future use.

All structures used to convey waste to waste impoundments or to provide drainage from the impoundment area shall be removed and replaced with compacted earth material or otherwise cleaned and rendered unable to convey waste.

Liquid and slurry wastes shall be agitated and pumped to the extent conventional pumping will allow. Clean water shall be added as necessary to facilitate the agitation and pumping. The wastewater shall be utilized in accordance with Conservation Practice Standard 633, Waste Utilization or Standard 635, Wastewater Treatment Strip.

The sludge remaining on the bottom and sides of the waste treatment lagoon or waste storage facility may remain in place if it will not pose a threat to the environment. If leaving the sludge in place would pose a threat, it shall be removed to the fullest extent practical and utilized in accordance with Conservation Practice Standard 633, Waste Utilization.

Earth Impoundments

Portions of impermeable membrane, concrete and earthen liner shall be removed to the extent it will allow water movement to sub-soils.

Impoundments with embankments shall be breached and/or filled with clean soil so that they will no longer impound water and may be reclaimed for other uses. The slopes and bottom of the breach shall be stable for the soil

material involved, however the side slopes shall be no steeper than three horizontal to one vertical (3:1). If backfilled, the backfill height shall exceed the design finished grade by 5 percent to allow for settlement. The top one foot of the backfill shall be constructed of the most clayey material available and graded to provide positive drainage. Cover the backfill with available topsoil to aid establishment of vegetation.

Excavated impoundments shall be backfilled so that they will no longer impound water and may be reclaimed for other uses. The backfill height shall exceed the design finished grade by 5 percent to allow for settlement. The top one foot of the backfill shall be constructed of the most clayey material available and graded to provide positive drainage. Cover the backfill with available topsoil to aid establishment of vegetation.

Steel and Concrete Impoundments

Above or below ground steel waste storage structures shall be demolished, disassembled, removed or otherwise cleaned and altered to such an extent that no water can be impounded.

Disassembled or demolished structure materials such as, but not limited to, steel panels, concrete rubble or pre-cast concrete units can be buried or shall be temporarily stored until their final disposition in such a manner that they do not pose a hazard to animals or humans.

Altered structures can be buried on-site. Closed or covered structures shall have the entire top removed. If buried on-site the backfill height shall exceed the design finished grade by 5 percent to allow for settlement. Final grading shall provide positive drainage. Cover the backfill with available topsoil to aid establishment of vegetation.

Conversion to Fresh Water Storage

A properly functioning seepage control liner and foundation drainage system shall remain in place.

All waste and sludge shall be removed before fresh water is introduced to the impoundment. The impoundment shall be filled and emptied at least twice to remove any residual contaminants, before it is put into use as a fresh water impoundment. The water removed during the cleansing process shall be irrigated on vegetated ground at rates that will prevent runoff or deep percolation. The converted impoundment shall meet the requirements as set forth in the appropriate practice standard for the intended purpose. Impoundments that have water impounded against the embankment are considered embankment structures if the depth of water is three feet or more above natural ground.

Safety

For structures converted to fresh water storage warning signs, fences, ladders, ropes, bars, rails, and other devices shall be provided, as appropriate, to ensure the safety of humans and livestock.

Personnel shall not enter an enclosed waste impoundment without breathing apparatus or taking other appropriate measures.

Protection

All disturbed areas not returned to crop production shall be vegetated using Conservation Practice Standard 342, Critical Area Planting or other suitable measures used to control erosion and restore the esthetic value of the site.

Measures shall be taken during construction to minimize site erosion and pollution of downstream water resources. This may include such items as silt fences, hay bale barriers, temporary vegetation, and mulching.

CONSIDERATIONS

Reduce pumping effort to empty waste impoundments where the surface is covered by a dense mat of floating vegetation by first applying herbicide to the vegetation and then burning the residue. Appropriate permits must be obtained before burning.

Alternative methods of sludge removal may be required where the impoundments contain large amounts of limestone, sand, soil, or other debris.

Minimize the impact of odors associated with emptying and land applying wastewater and sludge from a waste impoundment by using an incorporation application method at a time when the humidity is low, when winds are calm, and when wind direction is away from populated areas.

Mark and record the location of a closed impoundment and manure transfer system for future reference.

PLANS AND SPECIFICATIONS

Plans and specifications for closure of abandoned waste treatment lagoons and waste storage facilities shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. The plans and specifications shall also be consistent with the requirements of that standard.

OPERATION AND MAINTENANCE

The proper closure of a waste treatment lagoon or waste storage facility should require little or no operation and maintenance. However, if it is converted to another use, such as a fresh water facility, operation and maintenance shall be in accordance with the needs as set forth in the appropriate conservation practice standard for the intended purpose.